LEVEL BOOK

N. W. P. R. R. CO.

14.113.0030

Index

	Page.
Co-ordinates	1-to-
Lat. and Dep.	
from "F" 0+00 to "F" 170+09.5	59-to-61
from - Sw. Back #1 - to - #2	63-64
from Sw. Back #2 - to -	64 to 70
Tie - to Sw. Back #1 -	57-
Tie - to Sw. Back #2 -	58-
Location of E.S. F-163+52.62	56-
Alignment from 341+01± To. 440+72.0	9-23.
Alignment Ties. Page. 24	
Sec. Corner Ties	25
Levels Top of Rail Sta 379+05 - 440+50.	39-46.
Levels over Siding Camp #5	47

		Dist.	Sine	Cos.	Latt.	
"F" 0+00	1	249.8	.927293	.374337	N 93.509	W
	2	1156.1	.999263	.038388	N 44.380	W
	3	1210.0	.789798	.613367	N 742.174	W
	4	649.8	.946649	.322266	N 209.408	W
	5	541.9	.642342	.766418	N 415.322	W
	6	362.3	.943993	.329965	N 119.546	W
	7	575.6	.679441	.733730	S 422.335	W
	8	583.7	.998931	.046235	N 26.987	W
	9	454.0	.602512	.798110	N 362.342	W
	10	664.4	.979287	.202502	N 134.542	W
	11	1089.9	.994104	.108433	N 118.181	W
	12	343.1	.784957	.619551	N 212.568	W
	13	218.8	.956560	.291537	N 63.788	W
	14	532.8	.991709	.128507	S 68.469	W
	15	770.8	.847585	.530659	S 409.032	W
	16	257.0	.864128	.503271	S 129.341	W
	17	362.2	.844484	.535581	S 193.987	W
	18	231.2	.912001	.410188	S 94.835	W
	19	291.9	.894024	.448019	S 130.777	W
	20	409.2	.681360	.731949	S 299.514	W
	1	403.3	.852184	.523262	S 211.023	W
	2	667.3	.922650	.385638	S 257.336	W
	3	197.1	.864128	.503271	S 99.195	W
	4	295.0	.979867	.199653	S 58.898	W
	5	236.0	.994969	.100188	S 23.644	W
	6	363.4	.963006	.269480	N 97.929	W
	7	344.5	.198228	.980056	S 337.664	W
	8	238.9	.852032	.523490	S 125.062	W

+ North
− South

Depart.	Northing	Westing
W 231.638	93.51	231.64
W 1155.248	137.89	1386.89
W 955.656	880.06	2342.54
W 615.133	1089.47	2957.68
W 348.085	1504.79	3305.76
W 342.009	1624.34	3647.77
W 391.086	1202.00	4038.86
W 583.076	1228.99	4621.93
W 273.540	1591.33	4895.47
W 650.635	1725.88	5546.11
W 1083.474	1844.06	6629.58
W 269.319	2056.62	6898.90
W 209.295	2120.41	7108.19
W 528.383	2051.94	7636.58
W 653.319	1642.91	8289.90
W 222.081	1513.57	8511.98
W 305.872	1319.58	8817.85
W 210.855	1224.75	9028.70
W 260.966	1093.97	9289.67
W 278.813	794.46	9568.48
W 343.686	583.43	9912.17
W 615.684	326.10	10527.85
W 170.320	226.90	10698.17
W 289.061	168.01	10987.23
W 234.813	144.36	11222.05
W 349.956	242.29	11572.00
W 68.290	−95.37	11640.29
W 203.550	−220.44	11843.84

	Dist	Sine	Cos		
9	433.5	.953 366	.301 815	S 130.837	W
30	276.8	.689 620	.724 172	S 200.451	W
1	1066.7	.901 833	.432 086	S 460.906	W
2	712.4	.978 389	.206 773	N 147.305	W
3	222.6	.579 281	.815 128	N 181.447	W
4	309.9	.906 799	.421 563	N 130.642	W
5	417.9	.828 060	.560 639	N 234.291	W
170+09=F 6 =∠ 0+01	160.1	.725 575	.688 144	N 110.172	W
7					
8					
9					
40					
1					
2					
3					
4					
5					
6					
7					
8					
9					
50					
1					
2					

+ North
- South

		Northing	Westing
	W 413.284	-351.27	12257.13
	W 190.887	-551.72	12448.01
	W 961.985	-1012.63	13410.00
	W 697.004	-865.33	14107.00
	W 128.948	-683.88	14235.95
	W 281.017	-553.24	14516.97
	W 346.046	-318.95	14863.01
	W 116.165	-208.77	14979.179

# of Course	Dist.	Latitude + North	Latitude − South	Departure East
53	378.26		272.327	
4	126.8	102.214		75.038
5	273.6	212.777		171.996
6	422.7	260.143		333.168
7	427.4		44.799	425.045
8	435.9		67.564	430.632
9	282.1		108.334	260.469
60	351.4		310.220	165.062
1	448.7	36.376		447.223
2	368.6		251.462	269.504
3	219.3		192.755	104.585
4	212.5		128.527	169.225
5	219.1		217.985	22.078
6	468.7		366.893	291.666
7	473.7		341.993	327.769
8	517.0	266.661		442.923
9	569.0		477.294	309.761
70	461.9	153.805		435.540
1	309.1		251.591	179.569
2	325.5		169.508	277.880
3	298.9		70.369	290.499
4	248.5	90.470		
5	611.1	433.243		
6	330.9	66.631		
7	388.6	357.929		

	Coordinates		
West	North	West.	
262.523	3082.043	20337.326	P.I. Sw. Bk. #1
	3184.26	20262.29	
	3397,03	20090.29	
	3657.18	19757.12	
	3612.38	19332.08	
	3544.81	18901.45	
	3436.48	18640.98	
	3126.26	18475.92	
	3162.64	18028.69	
	2911.17	17759.19	
	2718.42	17654.60	
	2589.89	17485.38	
	2371.91	17463.30	
	2005.01	17171.64	
	1663.02	16843.87	
	1929.68	16400.94	
	1452.39	16091.18	
	1606.19	15655.64	
	1354.60	15476.07	
	1185.09	15198.19	
	1114.724	14907.694	Sw. Bk #2 P.I.
231.446	1205.19	15139.14	
430.980	1638.44	15570.12	
324.122	1705.07	15894.24	
151.318	2063.00	16045.56	

# of Course	Dist.	Latitude North	Latitude South	East
78	416.8	140.844		
9	185.2	0.808		
80	127.4	64.884		
1	129.7	106.889		
2	304.8	304.758		
3	321.0	89.825		
4	119.6	81.948		
5	121.0	112.386		
6	308.7	303.046		58.814
7	283.9	235.502		
8	387.8	244.489		
9	248.6	214.895		
90	175.7	87.096		
1	127.8	43.116		
2	151.4	25.553		
3	164.0		28.106	
4	157.2	27.703		
5	204.2	17.975		
6	279.1	71.373		
7	372.9	370.588		
8	464.9	304.082		
9	572.2		308.705	
100	457.6		25.411	
1	473.16		349.407	
2	389.53	148.248		
3	243.76	10.066		
4	270.3	227.035		

Y West	± Coordinates North South	+ West
392.282	2203.84	16437.84
185.198	2204.65	16623.04
109.640	2269.53	16732.68
73.463	2376.42	16806.14
5.054	2681.18	16811.20
308.176	2771.01	17119.37
87.113	2852.95	17206.49
44.837	2965.34	17251.32
	3268.39	17192.51
158.549	3503.89	17351.06
301.022	3748.38	17652.08
124.988	3963.27	17777.07
152.593	4050.37	17929.66
120.307	4093.48	18049.97
149.228	4119.04	18199.20
161.280	4090.93	18360.48
154.740	4118.63	18515.22
203.407	4136.61	18718.62
269.820	4207.98	18988.44
41.459	4578.57	19029.90
351.662	4882.65	19381.56
481.782	4573.95	19863.35
456.894	4548.54	20320.24
319.053	4199.13	20639.29
360.271	4347.48	20999.56
243.552	4357.44	21243.12
146.688	4584.48	21389.80

# of Course	Dist.	North	South	East	
105	154.8	53.368			
c	453.7		234.464		
7	375.15	142.555			
8	392.95		221.343		
9	278.7		265.009		
110	308.6		223.974		
1	382.9		372.424	88.953	
2	253.1		195.812		
3	683.3		680.078	66.283	
4	693.3	23.390			
5	377.7		375.887		
c	296.8		239.608		
7	977.2		975.785	52.562	
8	809.0	553.456			
9	226.6	209.980			
120	1234.1	589.101			
1	671.8		639.820		
2	401.8	173.717			
3	443.1		42.367		
4	953.0	949.997		75.601	
5	1039.9		616.365		
6	1016.7	980.431		269.136	
7	924.45		357.243		
8	819.80	785.291		235.350	
Rerun Line from Here 6/1/73	178.61	175.137			
9	513.85	503.860			
130	441.04		185.577		

Coordinates			
Y West	± North − South	+ West	
145.310	4637.85	21535.11	
388.420	4403.38	21923.53	
347.010	4545.94	22270.54	
324.680	4324.59	22595.22	
86.277	4059.58	22681.50	
223.974	3835.61	22905.48	
	3463.19	22816.52	
160.366	3267.37	22976.89	
	2587.30	22910.61	
692.906	2610.69	23603.51	
36.966	2234.80	23640.48	
175.152	1995.19	23815.63	
	1019.41	23763.07	
590.058	1572.86	24353.13	
83.844	1782.84	24436.97	
1084.987	2371.94	25521.96	
204.808	1732.12	25726.76	
362.306	1905.84	26089.07	
440.973	1862.47	26530.04	
	2812.47	26454.44	
837.547	2196.11	27291.99	
	3176.54	27022.85	
852.623	2819.29	27875.48	
	3604.58	27640.13	
35.049	3779.721	27675.175	341+01.4 E.C.
100.834	4108.44	27740.96	End of Tk.
400.097	3922.86	28,141.06	

# of Course	Dist.	North	South.	East.
131	305.79	55.901		
132	455.96		359.383	
133	547.46		199.014	
134	244.68	12.734		
135	821.72		338.367	
136	730.05		197.347	702.870
137	450.82		447.032	
138	571.39		254.804	
139	421.58	359.136		
P.I. Sw. Bk #3	697.58		594.254	365.349
End Tail Track	85.00		60.540	59.666
140	241.31		190.284	148.399
141	457.95		169.078	
142	257.94		16.496	
143	412.87	149.304		
400+83.8 P.O.T.	291.92		283.514	
Tie Course to 406+13.2 P.O.T.	336.40	62.939		
145	290.10	285.410		51.954
146	609.46	240.255		
147	641.57	325.943		
148	454.23		445.242	
149	160.03		144.037	
150	56.80		52.726	
End Tail Track	228.20		197.561	
424+19.02 P.O.T.	97.00		87.306	
152	423.40	343.980		
153	318.01	296.755		114.310

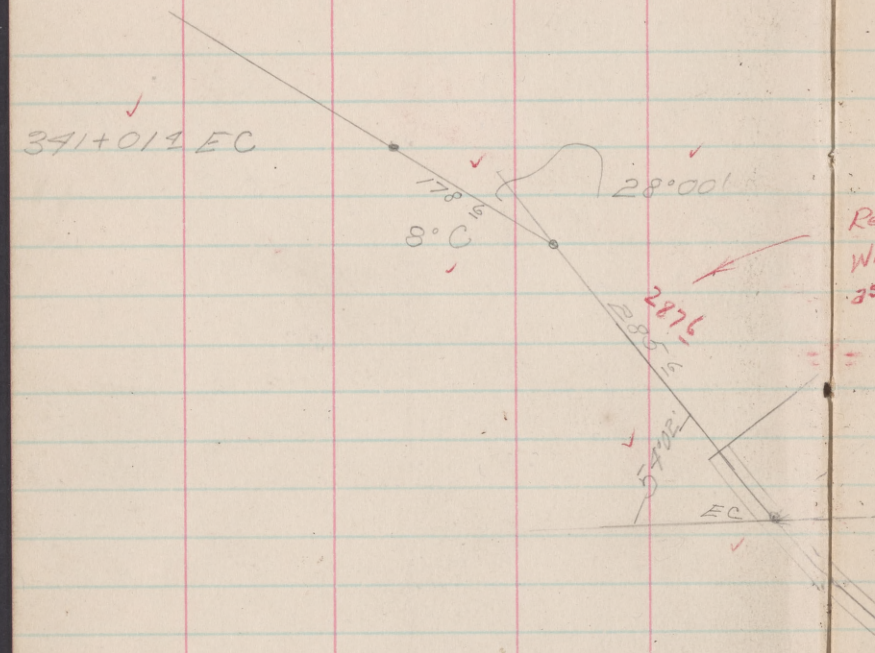
Coordinates.

West	± North ± South	+ West.	Remarks
300.637	3978.76	28441.70	
280.612	3619.38	28722.31	
510.006	3420.37	29232.32	
244.348	3433.10	29476.66	
748.820	3094.73	30225.48	
	2897.39	29522.61	
58.324	2450.36	29580.94	
511.431	2195.55	29069.51	
220.797	1836.42	28848.71	X Pt. Sw. Bk. #3
	1601.30	28,704.16	Sw. Bk. No 3.
	1540.76	28644.49	
	2026.70	28997.11	
425.595	1857.62	29422.70	
257.412	1841.13	29680.12	
384.929	1990.43	30065.05	
69.550	1706.92	30134.60	
330.460	1769.85	30465.06	
	2055.26	30413.10	
560.106	2295.52	30973.21	
552.606	2621.46	31525.81	
89.911	2176.22	31615.72	
69.734	2032.18	31685.46	
21.124	1979.46	31706.58	X Pt. Sw. Bk #4
114.215	1781.90	31,820,80	Sw. Bk #4
42.268	2088.91	31657.99	
246.871	2432.89	31,904.86	
	2729.65	31,790.55	

# of Course	Dist.	North	South	East
154	169.57	167.751		24.771
155	161.14	156.399		38.801
156	215.09	213.852		23.043
End of Steel 4/5/73	128.11	83.512		97.149
157	309.76	228.335		209.730
158	134.35	129.124		
Tie to ¼ Sec. Cor.	1776.77	1637.742		689.004
159	201.25	173.343		
Tie to ¼ Sec. Cor.	1664.493	1464.399		791.247

West	Coordinates. +North -South	+ West	Remarks.
	2897.40	31765.78	
	3053.80	31726.98	
	3267.65	31703.94	
	3351.16	31606.79	
	3495.99	31494.71	
37.107	3625.11	31531.82	
	5262.85	30842.81	
102.243	3798.45	31634.06	
	5262.85	30842.81	

Ten Mile



5-30-23 9

Records give distance in red!
Will regard distance given here as Typographical Error
as every thing else on this page checks with Records.
G.A.R. 6/11/13

330+13.2

Pick-Up Tangent. 6/30/13
G.A.R. per C.L.M.

331+02.3 BC

25° 28'

15°4

339+25.2

30°

Checked 6/11/13
G.A.R.

Ten Mile.

341+01.4	EC	
341+93?	BC	30° L
342		0° 55'
+50		8° 25
343		15° 55
+50		23° 25
344		30° 55
+50		38° 25
345		45° 55'
+39.-	EC	51° 47'
346+45?	BC	20° R
+50		0° 24½'
347		5° 24½
+50		10° 24½
348		15° 24½
+23.-	EC	17° 42½'

All Curves over 10* are run in on 25 ft Cords.

			L	R
			¢	is
			0.5	
			0.7	
TC =	103* 34'	R = 191.13. ✓		
ST =	242.74 ✓		0.9	
L =	345.22 ✓		1.2	
			1.7	
			1.1	
			0.6	
			0.5	
Δ =	35* 25'	R = 286.56 57 ✓ OK		
ST =	91.50 ✓			
L =	177.08 ✓			

349+21	BC	30° L		
+50		4° 19 1/4		
350		11° 49 1/4		
+50		19° 19 1/4		
351		26° 49 1/4		
+29	EC	31° 16 1/2		
354+17	BC	30° R		
+50				
355+20	EC			
+19				

		L	R
			0.3
		0.3	
Δ =	62° 33	0.0	
ST =	116.09 ✓		0.7
L =	208.5 ✓		1.1
			0.5

Δ =	30° 42'	OK
ST =	52.47 ✓	
L =	103.5 102 33 ✓	

+52.7
359+53.9 BC 20° R
360
+50
+75.4 EC
+74.7

+97.6
361+98.8 BC 20° L
362
+50
363
+35.3 EC
+34.1

		L	R
			4
			0 7
Δ =	24° 18'		0 5
ST =	61.69 ✓		1 1
L =	121.5 ✓		1 0
			0 3
Δ =	27° 18'		0 5
ST =	69.59 ✓		1 1
L =	136.5 ✓		0 3
			0

+61 1/2
365+62 3/4 BC 30° L
366
+50
367
+50
368
+50
369
+50
370
+29 9/10 EC
+27 8/10

+67 3/4
370+68 5/8 BC 30° R
371
+50
372
+50
373
+41 9/10 EC
+39 8/10

N 20° 00' W

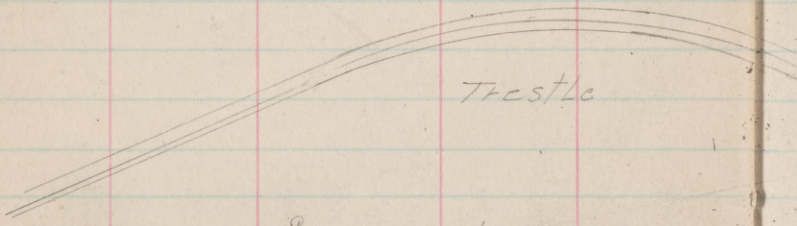
			L	Rt
			@ 15	
				0.3
				0.7
Δ =	140° 00'	✓		0.8
ST =	525.13	✓		1.2
L =	466.67	✓		1.4
				1.3
				1.8
				1.6
				1.2
				0.9
Δ =	81° 45'	✓		
ST =	165.42	✓		OK
L =	272.5	✓		

+89.00		
374+90.00	BC	30° L
375		
+50		
376		
+50		
377		
+50		
+62.77	EC	377+25.00 E.C. = 377+62.77 R.O.T.
381+15.91	BC	20° R
+50		
382		
+50		
+75.00	EC	

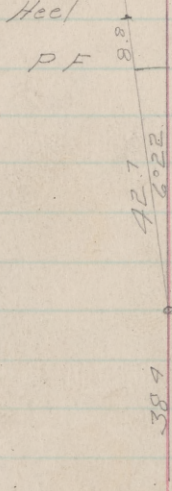
Δ = 70°57' ✓
ST = 136.20 ✓ OK
L = 236.5 ✓

Δ = 31°56 ✓
ST = 81.99 ✓ OK
L = 159.7 67 ✓

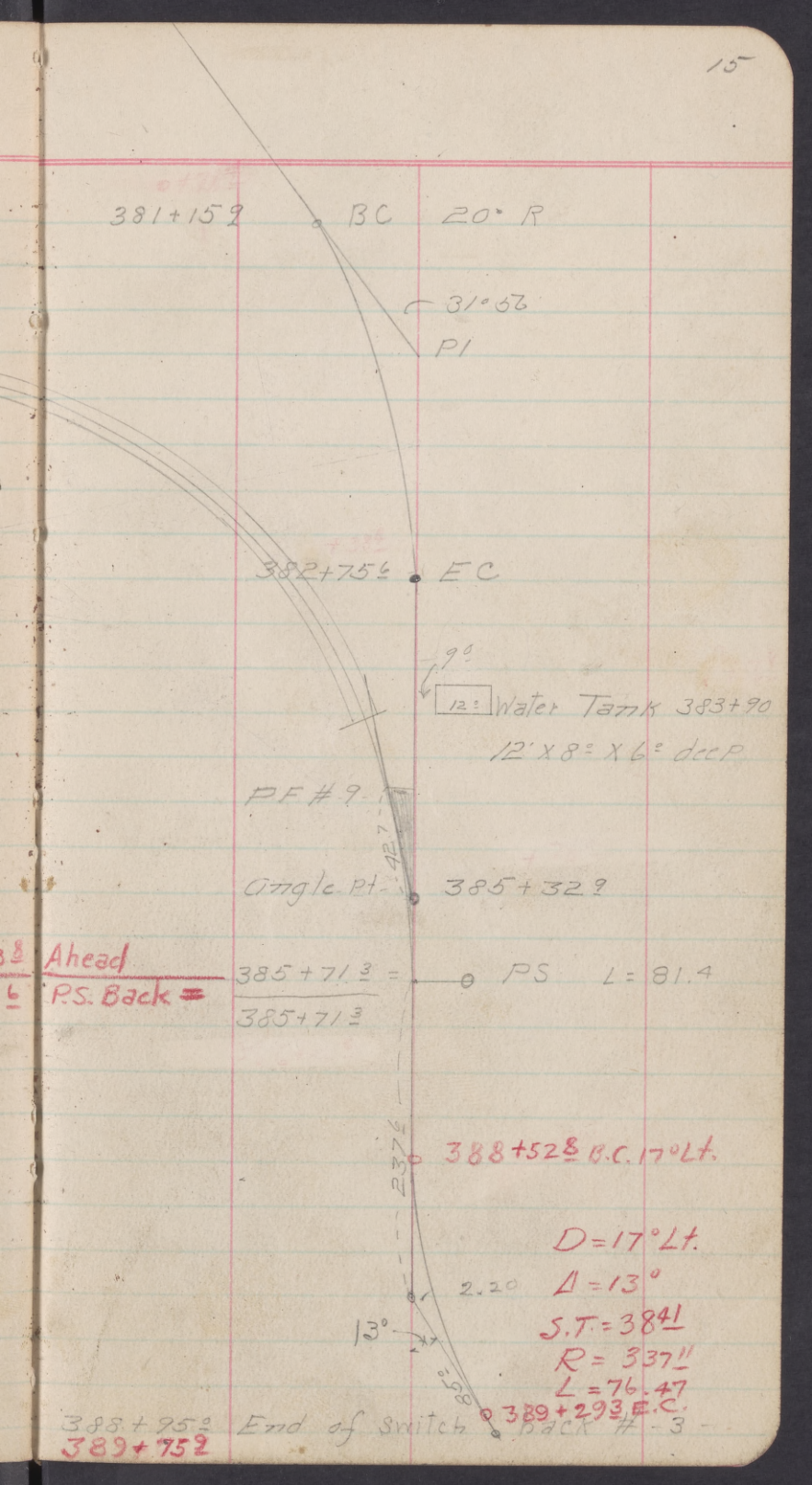
Switch back # 3

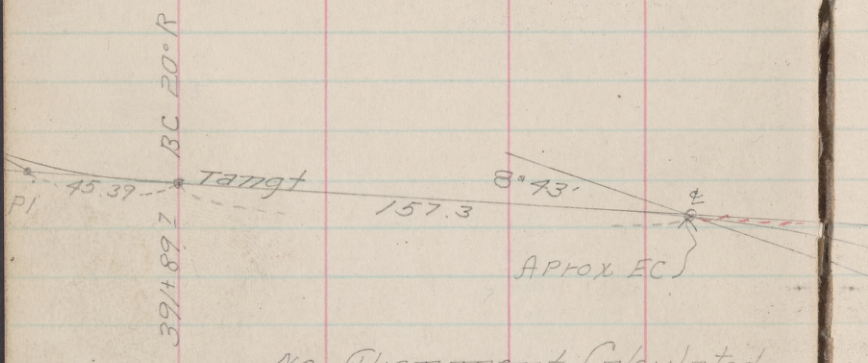


See next page

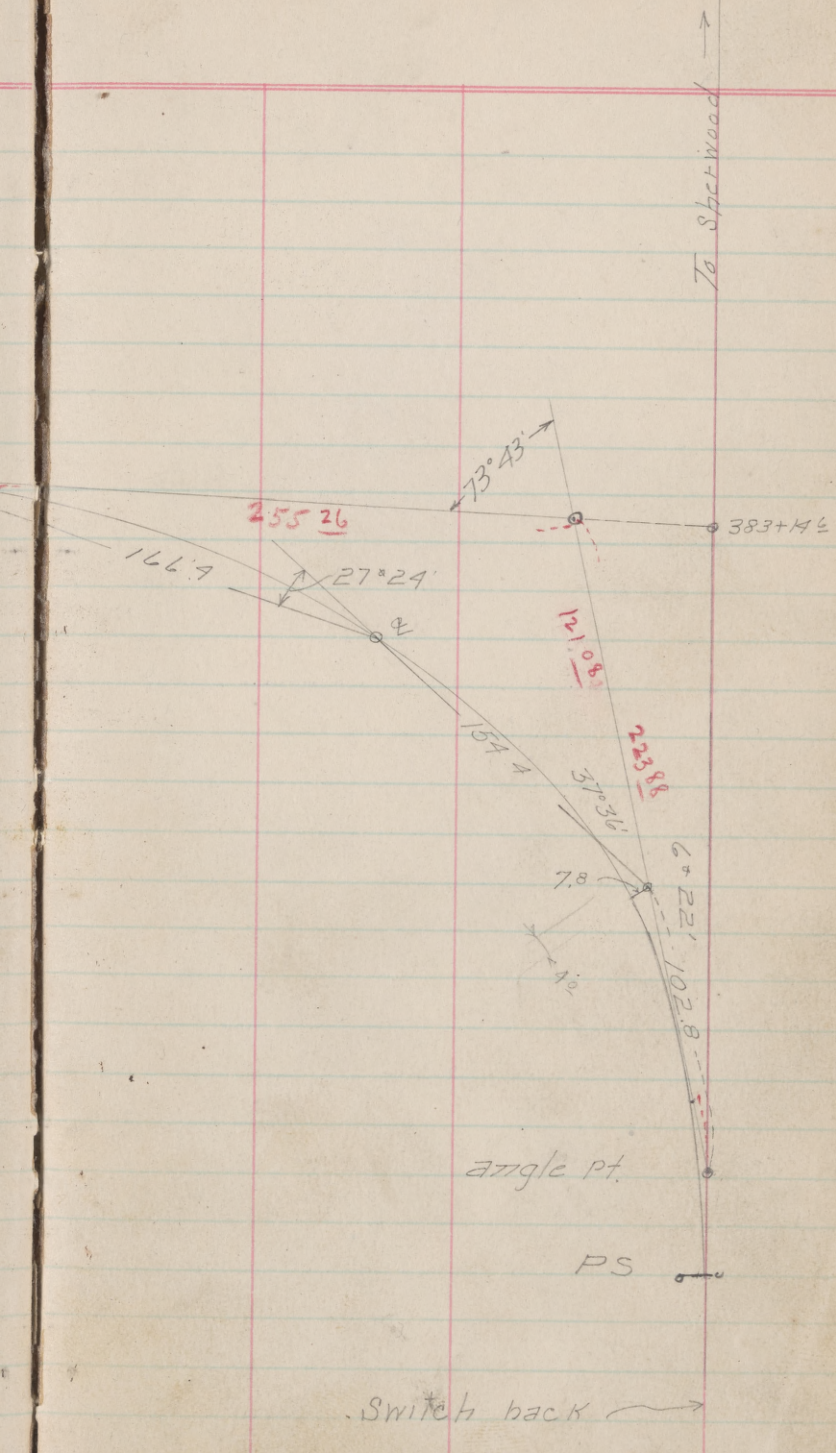


385+53.8 AH
386+53.6 PS


381+15.9
BC
20° R
31°56
PI
382+75.6
EC
9°
12°
Water Tank 383+90
12' X 8° X 6° deep
PF #9
42.7
Angle Pt.
385+32.9
Ahead
P.S. Back =
385+71.3 =
385+71.3
PS
L = 81.4
237.6
388+52.8 B.C. 17° Lt.
D = 17° Lt.
2.20
Δ = 13°
S.T. = 38.41
R = 337.11
L = 76.47
13°
85°
389+29.3 E.C.
388+95.0
389+75.9
End of Switch
Back #-3-



No Alignment Calculated for this Curve.
Chainage Carried around ℄ of Present Trk


To Sherwood
73°43'
255 26
383+14
166.4
27°24'
121.08
154.4
22388
37°36'
6+22'
7.8
4°
102.8
angle pt.
PS
Switch back

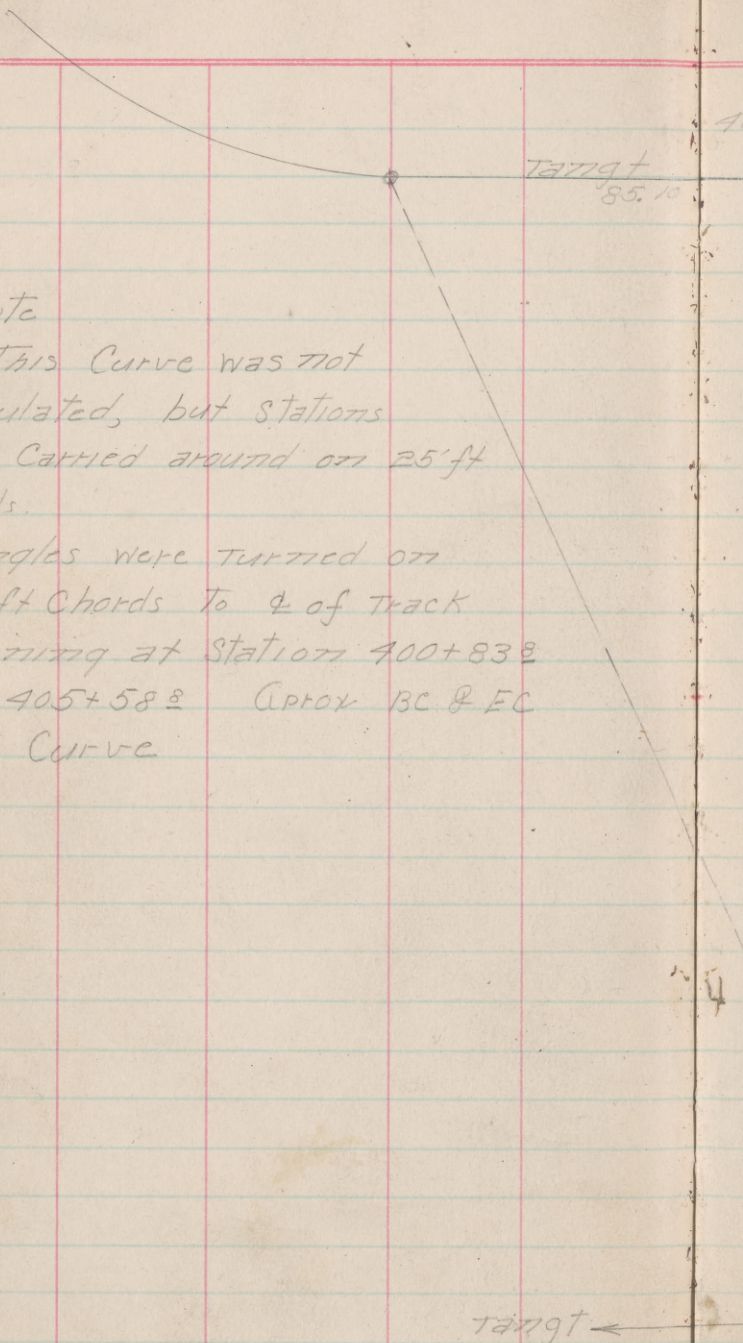
391+89.7	BC	20° R		
392				
+50				
+79.7	EC			
394+08.9	BC	15° R		
+50				
395				
+50				
+73.8	EC			
396+84.8	BC	30° L		
397				
+50				
398				
+50				
399				
+50				
400				
+09.5	EC			

Δ = 18°00' ✓
ST = 45.39 ✓ OK
L = 90.00 ✓

Δ = 24°52' ✓
ST = 84 ~~22~~ 25 ✓ OK
L = 165 ~~8~~ 77 ✓
R = 382 ~~14~~ G.A.R.

03
07

Δ = 97°25' ✓ 0.1
ST = 217 ~~61~~ 62 ✓ 1.3
L = 324 ~~7~~ 72 ✓ 2 =
2.6
1.9
0.5
0.7



Note

This Curve was not Calculated, but Stations were Carried around on 25 ft Cords.

Angles were Turned on 50 ft Chords To ℄ of Track beginning at Station 400+83 ± To 405+58 ± Aprox BC & EC To Curve

100+83.8
4°15'
50
87°00'
18°37'
50
18°22
50
19°25
50
14°16
50
13°55'
50
16°04
50
17°57'
50
20°35'
50
17°15
25
14°19'
1°32'
89°32
14°00
336 40
G.A.R.

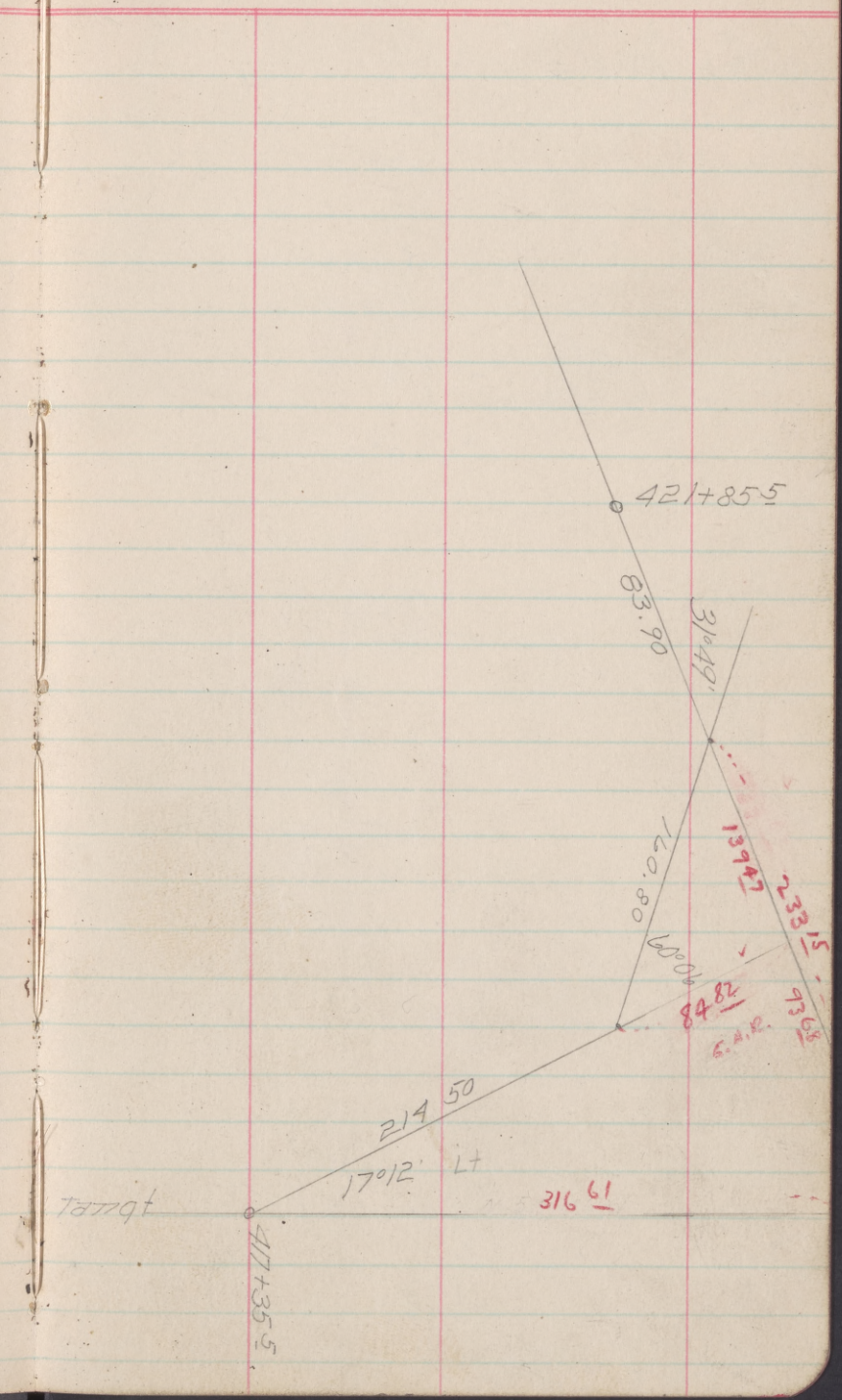
406+96 ±	BC	30° L		
407				
+50				
408				
+50				
409				
+50				
+53 ±	EC			
413+49 ±	BC	6° R	10' cords	
+50				
414				
+50				
+71 ±	EC			

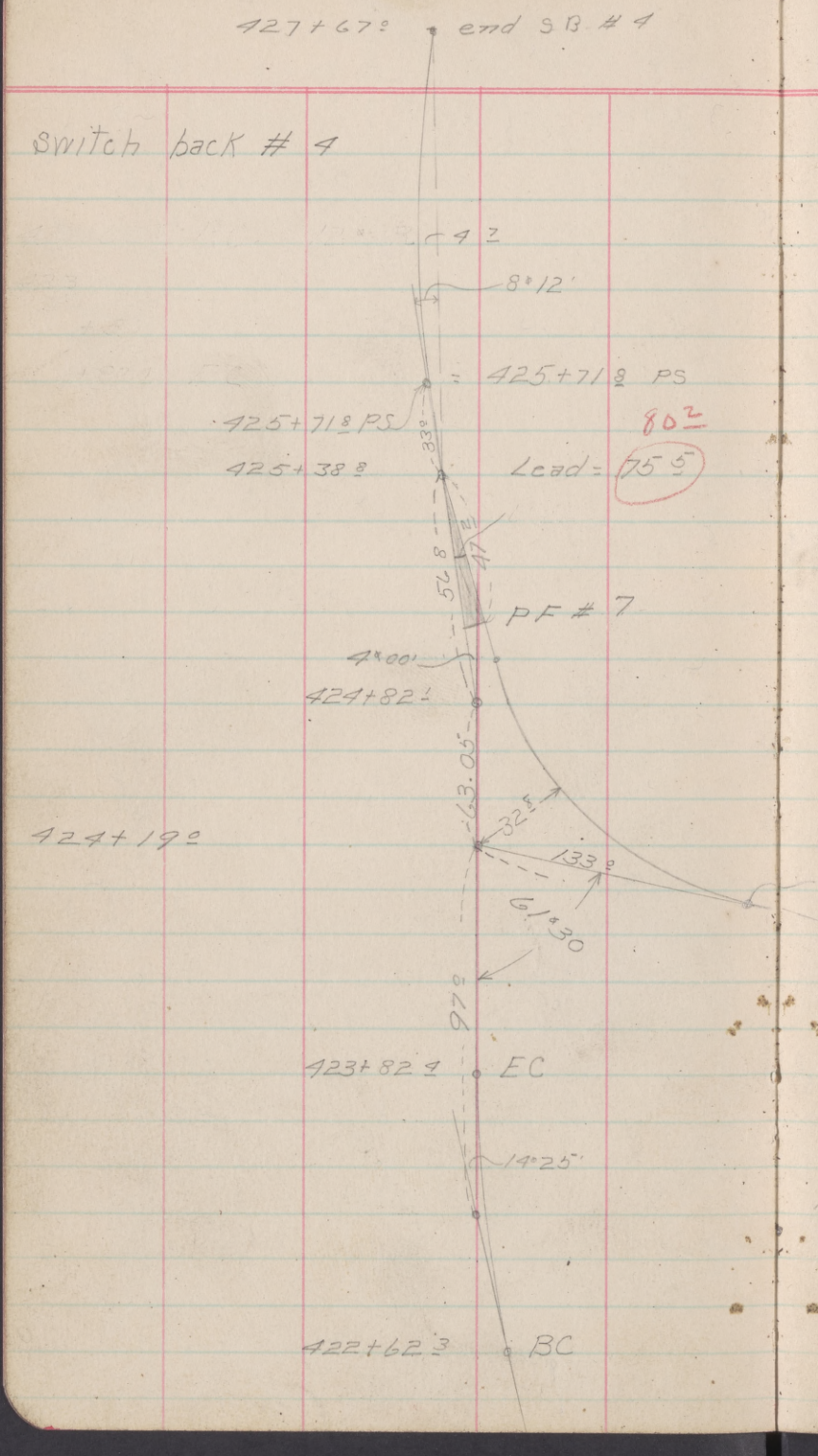
Δ = 77°06' ✓
ST = 152.~~40~~ 30 ✓ OK
L = 257 ✓

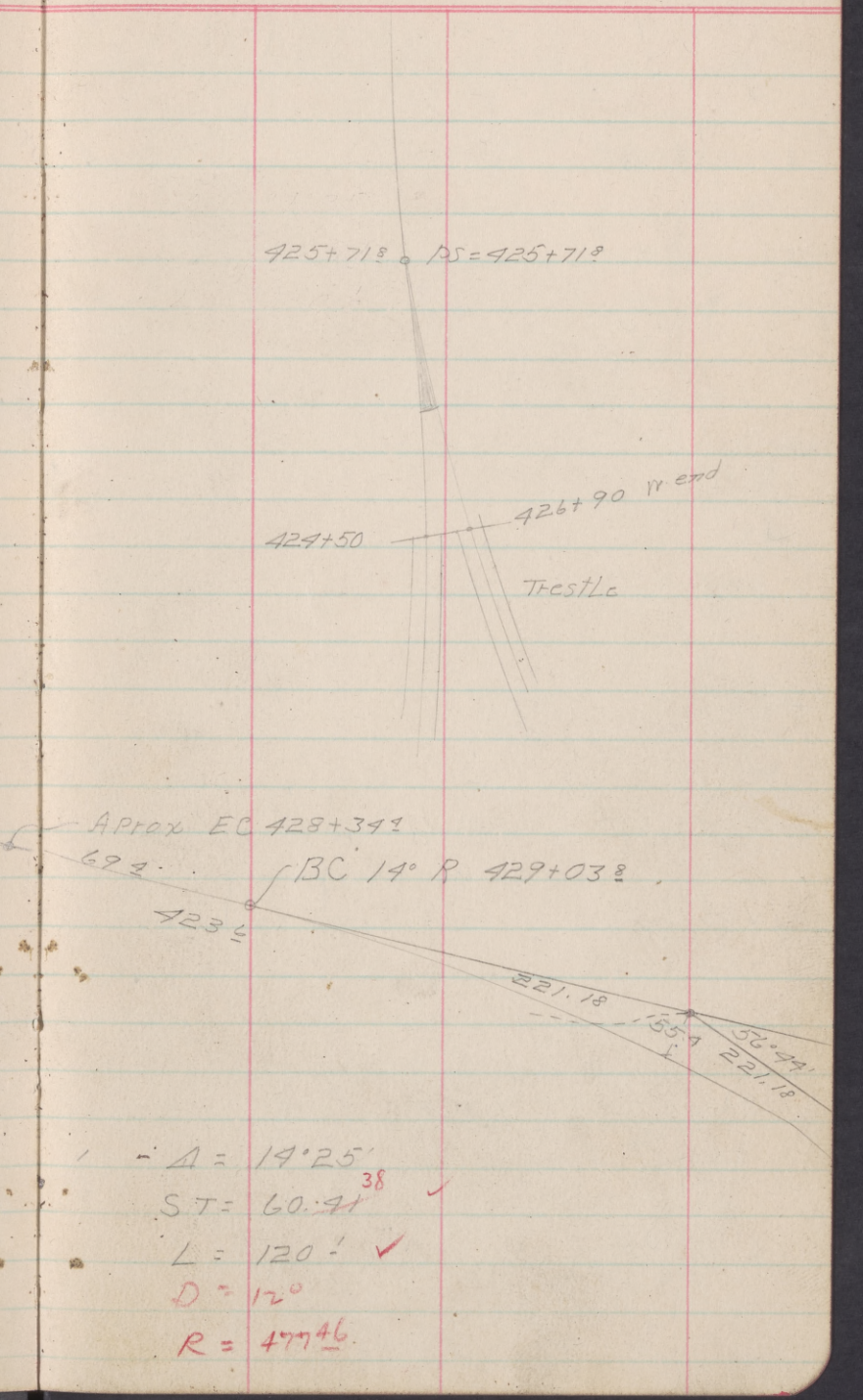
Δ = 7°19'
ST = 61.06 ✓ OK
L = 121.9 ✓

417+35.5	BC - Gpr-	
	3°47	
	9°10	
	11°11	
	14°31	
	15°26	
	14°26	
	16°20'	
	14°29'	
421+85.5	8°17	EC Aprox
	1°30'	

Note
Curve run same as on Page 18 beg at station 417+35.5 To 421+85.5 on 50' ft Chords Turned To ℄ Track


421+85.5
83.90
31°49'
160.80
60°06'
139.47
233.15
84.82
93.68
214.50
17°12' Lt
316.61
Tangt
417+35.5


427+67° end SB #4
switch back #4
4 7
8°12'
425+71 8 PS
425+71 8 PS
80 2
33°
425+38 8
Lead = 75 5
47 2
56 8
PF #7
4°00'
424+82 1
63.05
32 8
424+19°
133°
61°30
97°
423+82 4
EC
14°25'
422+62 3
BC



Δ = 14°25'

S.T. = 60.38 ✓

L = 120' ✓

D = 12°

R = 477.46

429+03.8	BC	14° R		
+50				
430				
+50				
431				
+50				
432				
+50				
433				
+09.0	EC			
433+79.2	BC	20° L		
434				
+37.5	EC			
435+29.1	BC	6° R		
+50				
436				
+21.3	EC			

		L	R
		4	
		.03	
		02	
		0.2	
		0.6	
Δ =	56° 49'	0.7	
ST =	221.00 ✓	1.0	
L =	405.2 ✓	1.9	
R =	409 30 ✓	1.5	
		1.2	
		0.8	
Δ =	12°40		
ST =	31.81 ✓		OK
L =	63.30 ✓		
Δ =	5°32		
ST =	46.16 ✓		OK
L =	92.2 ✓		

436+80.6 BC 7° L

437

+50

+91.8 EC

438+75.6 BC 30° R

439

+50

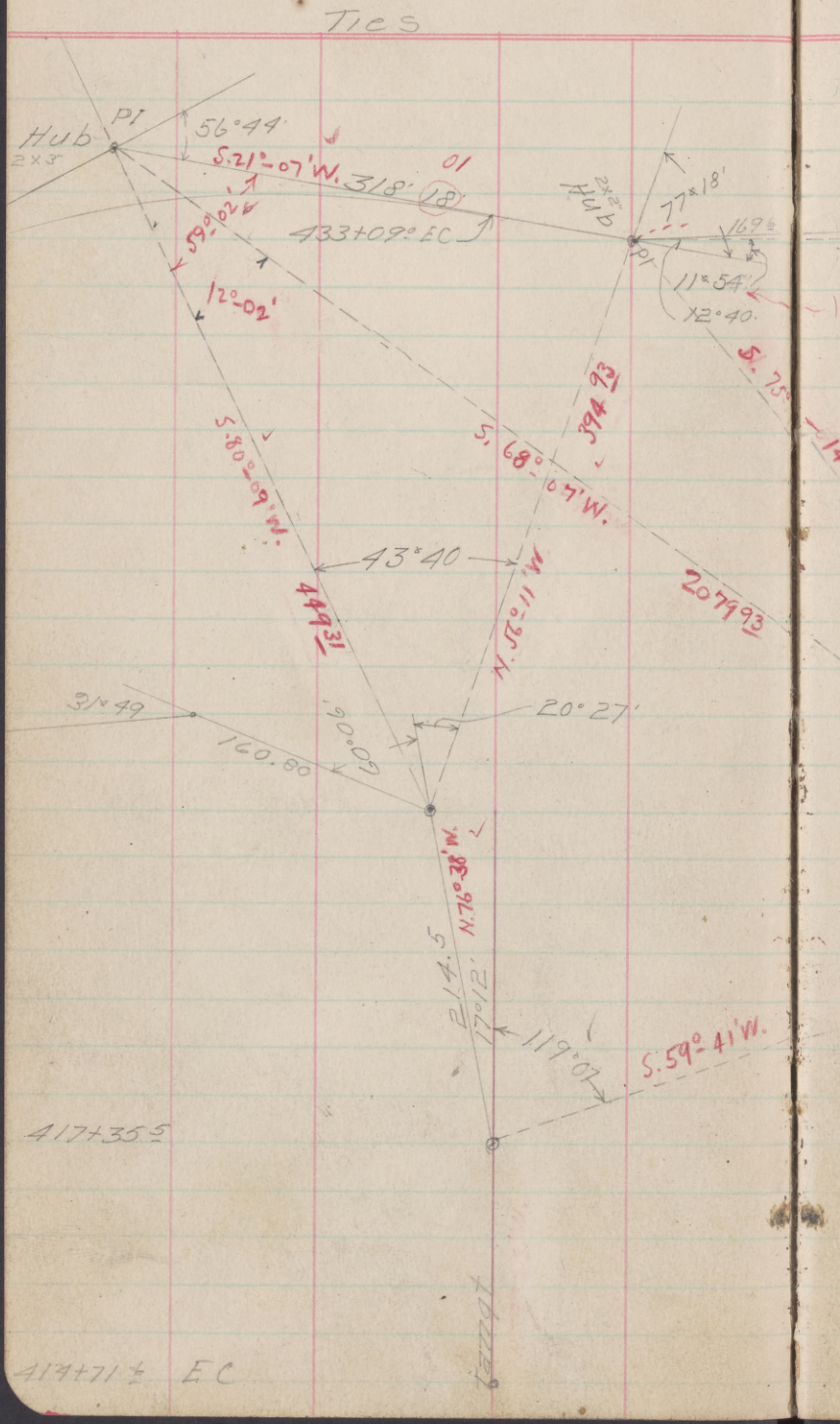
440

+19.5 EC

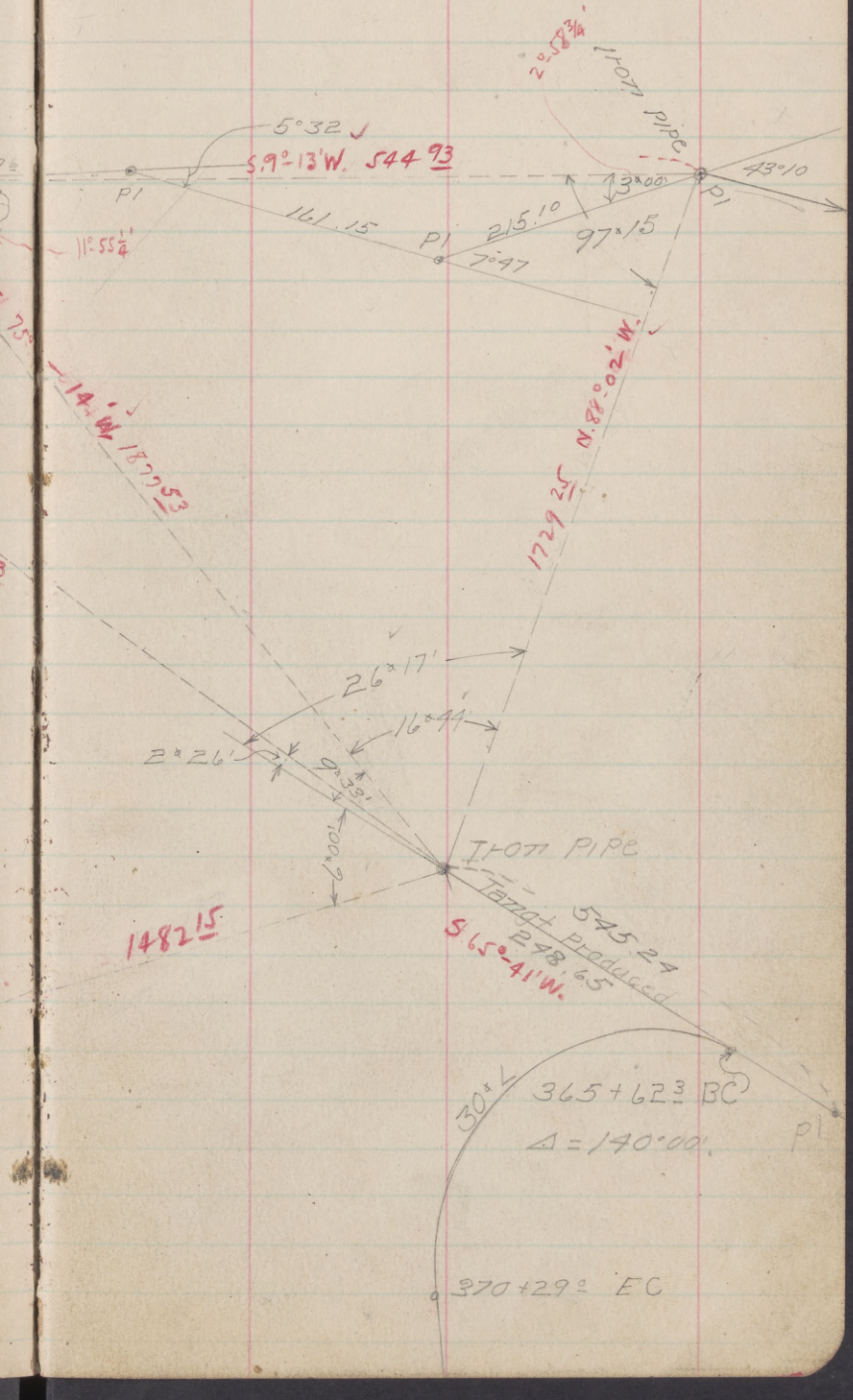
440+72.0 End of Steel-6-3-23

Δ = 7°47' ok.
ST = 55.68 ✓
L = 111.2 ✓

Δ = 43°10'
ST = 75.61 ✓ ok
L = 143.9 ✓


Ties
Hub
2×3"
PI
56°44'
S.21°-07'W.
318'
18'
01
433+09° EC
59°02'
12°-02'
Hub
2×2"
77°18'
169.6
PI
11°54'
12°40'
S. 75°
394 93
S. 68°-07'W.
S.80°-09'W.
43°40
44931
N.52°11'W.
207993
31°49
160.80
60°06'
20°27'
N.76°38'W.
214.5
17°12'
119°07
S.59°-41'W.
417+35.5
tangt
414+71.5 EC

Ten Mile



2°-58 3/4'
Iron pipe
5°32
S.9°-13'W. 544 93
P1
161.15
P1
215.10
3°00
97°15
43°10
P1
7°47
11°-55 1/4'
75°
14'W. 1877 53
N.88°-02'W.
1729 25
26°17'
16°44'
2°26'
9°33'
7°00'
Iron Pipe
Tangt produced
545 24
248.65
S.65°-41'W.
1482 15
30°
365+62 3 BC
Δ = 140°00'
P1
370+29° EC

Ten Mile

11°54'
Iron Pin
36°21'
309.70
Set 1.5' & 18' to ℄ of Roadbed.
58°32'
134.35
14°30'
P.O.T. ℄ of Roadbed
to End Finished Roadbed

to End Finished
150
53°21'
201.25
121.05
Within 10 days from Time of
Leaving - Could Lay Steel to here!
In ℄ Roadbed
100'
Trestle under Constr.
here.
General Direction of
Extension
S
Sec 6
E
W
N
Sec 31
1/4 Cor
Plotted 6/14/23
G.A.R.
On Hand Copy

				1213.010
	4.17	1217.180		
			14.33	1202.85
	0.37	1203.22		
340			0.2	1203.2
+50			2.0	1201.2
341			4.1	1199.1
+50			5.8	1197.4
342			7.8	1195.4
+50			9.3	1193.9
			10.32	1192.90
	1.99	1194.89		
343			2.2	1192.7
+50			3.8	1191.1
344			5.6	1189.3
+50			6.8	1188.1
345			8.5	1186.4
+50			10.1	1184.8
346			11.9	1183.0
+50			13.8	1181.1
			15.18	1179.71
	0.06	1179.77		
347			0.6	1179.2
+50			2.5	1177.3
348			4.3	1175.5
+50			6.1	1173.7
349			8.1	1171.7

10-27-20

28

from book 055 . Page 51

BM Nail on Stump Rt Sta 337 + 25

Top of rail. elev

		1179.77		
+50			9.6	1170.2
350			10.8	1169.0
			11.25	1168.52
	0.74	1169.26		
+50			1.7	1167.6
351			3.2	1166.1
+50			4.6	1164.7
352			6.4	1162.9
+33			7.8	1161.5
+50			8.5	1160.8
353			10.8	1158.5
+50			12.8	1156.5
354			14.8	1154.5
			15.11	1154.15
	0.74	1154.89		
+50			2.4	1152.5
+89			3.7	1151.2
355			4.1	1150.8
+50			5.8	1149.1
356			7.8	1147.1
+50			10.1	1144.8
+74			11.2	1143.7
357			12.4	1142.5
+50			14.7	1140.2
			14.97	1139.92
	0.93	1140.85		

W. Blk T 55 +40.6

Note Sta 353+00 = Harps Sta 353+00.5

E blk. 55 +93.6

Point of Switch +80.9

		1140 85		
			0.14	1140.71
358			2.9	1138.0
+50			4.7	1136.2
359			6.8	1134.1
+50			9.1	1131.8
360			11.6	1129.3
			13.48	1127.37
	0 91	1128.28		
+50			1.2	1127.1
361			3.1	1125.2
+50			4.7	1123.6
362			6.3	1122.0
+50			7.6	1120.7
363			9.2	1119.1
+50			11.1	1117 2
+81			12.3	1116.0
364			13.1	1115.2
			12.71	1115.67
	6.43	1122.00		
			14.240	11.07.760
+50			9.0	1113.0
365			11.5	1110.5
+50			13.7	1108.3
+70			14.5	1107.5
			14.80	1107.20
	9.98	1117.18		

BM Nail in top of stump 35' Rt Sta 357+25

Camp # 5. Sta 362+60 Ctr Cook Ho

W Blk. T 56 + 88 ?

64 + 16 5 PS

BM Nail in side of stump 30' ft Rt of Sta 363+60. (Harps elev 1107.92)

E. blk

		1117.18		
366			10.6	1106.6
+50			11.7	1105.5
			13.23	1103.95
	1.64	1105.59		
367			2.1	1103.5
+50			3.8	1101.8
368			4.8	1100.8
+50			5.9	1099.7
369			7.0	1098.6
+50			8.2	1097.4
			8.46	1097.13
	0.83	1097.96		
370			2.2	1095.8
+50			3.7	1094.3
371			4.9	1093.1
+42.3			5.8	1092.2
+50			6.1	1091.9
372			7.5	1090.5
+50			9.2	1088.8
373			11.0	1087.0
+04.2				
+50			12.9	1085.1
374			15.0	1083.0
			14.92	1083.08
	5.38	1088.42		
+50			7.2	1081.2

W. Blk 7 57

E blk.

		1088.42		
375			8.2	1080.2
+50			10.0	1078.4
			10.63	1077.79
	1.70	1079.49		
376			3.3	1076.2
+50			5.1	1074.4
377			6.5	1073.0
+50			8.3	1071.2
			10.12	1069.37
	1.17	1070.54		
+65			0.0	1070.5
378			1.3	1069.2
+50			3.4	1067.1
379			5.6	1064.9
+28			6.8	1063.7
+50			7.5	1063.0
380			9.6	1060.9
+50			11.9	1058.6
381			13.6	1056.9
			8.99	1061.55
			15.16	1055.38
	3.58	1058.96		
+50			3.8	1055.2
382			5.5	1053.5
+04	end of Track			
			8.86	1050.10

Ten Mile.

Bottom of Cut

Elev 490.5

Base Rail at Cook House

#5. Es. 362

Elev. 1120.7

630.2

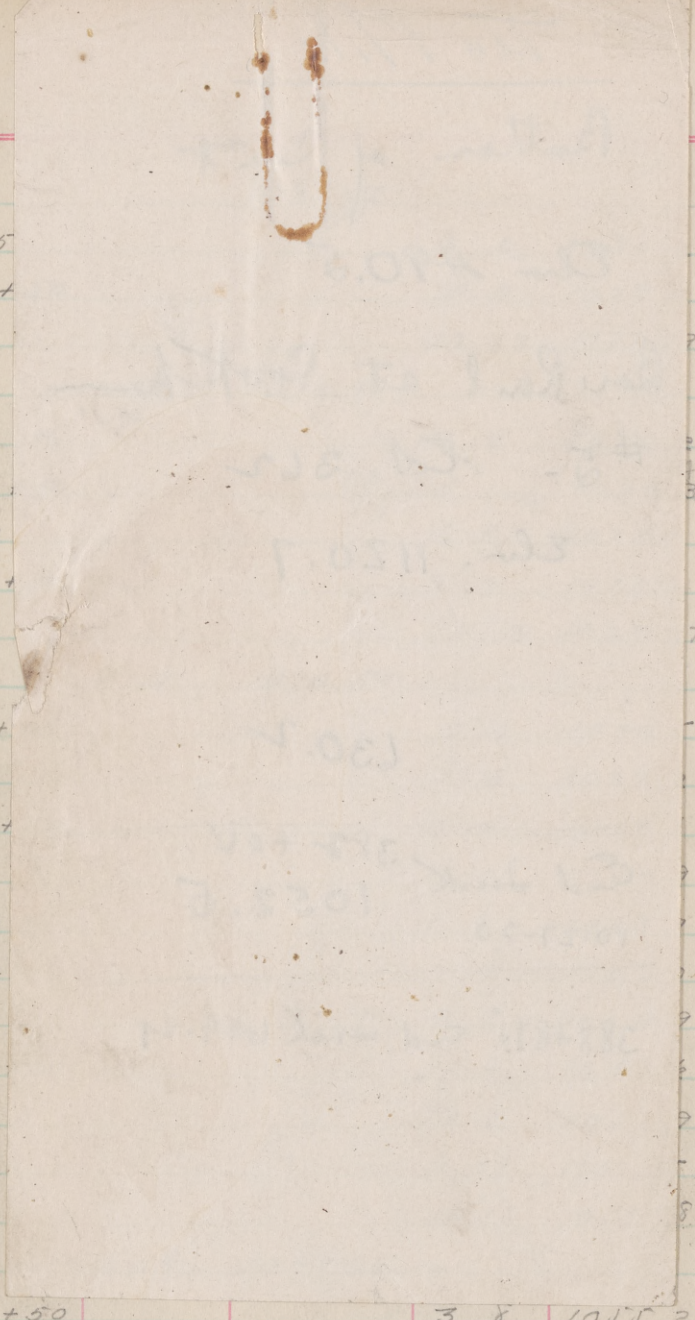
End Track 382+04

1053.5

10-27-20

388+87.5 End Track 629-2

BM RR SPIKE in top STUMP 30' Rt 382+20



375				
+				
376				
377				
+				
+				
378				
+				
379				
+				
+				
380				
381				
+50			3 8	1055.2
382			5.5	1053.5
+04	end of Track			
			8.86	1050.10

W. Blk 58

E Blk 58

BM Nail in Cap Sta 379+12 ± ℄ track

BM RR Spike in top Stump 30' Rt 382+26'

1/4 Mile

Difference in elev from

362				1122.00
	3.5	1125.50		
			13.0	1112.5
	0.0	1112.5		
			13.0	1099.5
	0.0	1099.5		
			13.0	1086.5
	0.0	1086.5		
			13.0	1073.5
	0.0	1073.5		
			13.0	1060.5
	0.0	1060.5		
			13.0	1047.5
	1.0	1047.5		
			13.0	1034.5
	0.0	1034.5		
			13.0	1021.5
	0.0	1021.5		
			13.0	1008.5
	0.0	1008.5		
			13.0	995.5
	0.0	995.5		
			13.0	982.5
	0.0	982.5		
			13.0	969.5

6-29-31

33.

Engr Sta 362+00 to bottom of

Ten Mile Creek Rt angles To Sta 362.

				969.5
	0.0	969.5		
			13.0	956.5
	0.0	956.5		
			13.0	943.5
	0.0	943.5		
			13.0	930.5
	0.0	930.5		
			13.0	917.5
	0.0	917.5		
			13.0	904.5
	0.0	904.5		
			13.0	891.5
	0.0	891.5		
			13.0	878.5
	0.0	878.5		
			13.0	865.5
	0.0	865.5		
			13.0	852.5
	0.0	852.5		
			13.0	839.5
	0.0	839.5		
			13.0	826.5
	0.0	826.5		
			13.0	813.5
	0.0	813.5		
			13.0	800.5

				800.5
	0.0	800.5		
			13.0	787.5
	0.0	787.5		
			13.0	774.5
	0.0	774.5		
			13.0	761.5
	0.0	761.5		
			13.0	748.5
	0.0	748.5		
			13.0	735.5
	0.0	735.5		
			13.0	722.5
	0.0	722.5		
			13.0	709.5
	0.0	709.5		
			13.0	696.5
	0.0	696.5		
			13.0	683.5
	0.0	683.5		
			13.0	670.5
	0.0	670.5		
			13.0	657.5
	0.0	657.5		
			13.0	644.5
	0.0	644.5		
			13.0	631.5

				631.5
	0.0	631.5		
			13.0	618.5
	0.0	618.5		
			13.0	605.5
	0.0	605.5		
			13.0	592.5
	0.0	592.5		
			13.0	579.5
	0.0	579.5		
			13.0	566.5
	0.0	566.5		
			13.0	553.5
	0.0	553.5		
			13.0	540.5
	0.0	540.5		
			13.0	527.5
	0.0	527.5		
			13.0	514.5
	0.0	514.5		
			13.0	501.5
	0.0	501.5		
			11.0	490.5

Elev Bas Rail. of Cook Ho #5 E.S. 362+00 = 1120.7
Elev B. of Cr. 490.1 diff. 630.7 ft.

Elevation of bench along creek 520.

Bottom of Creek.

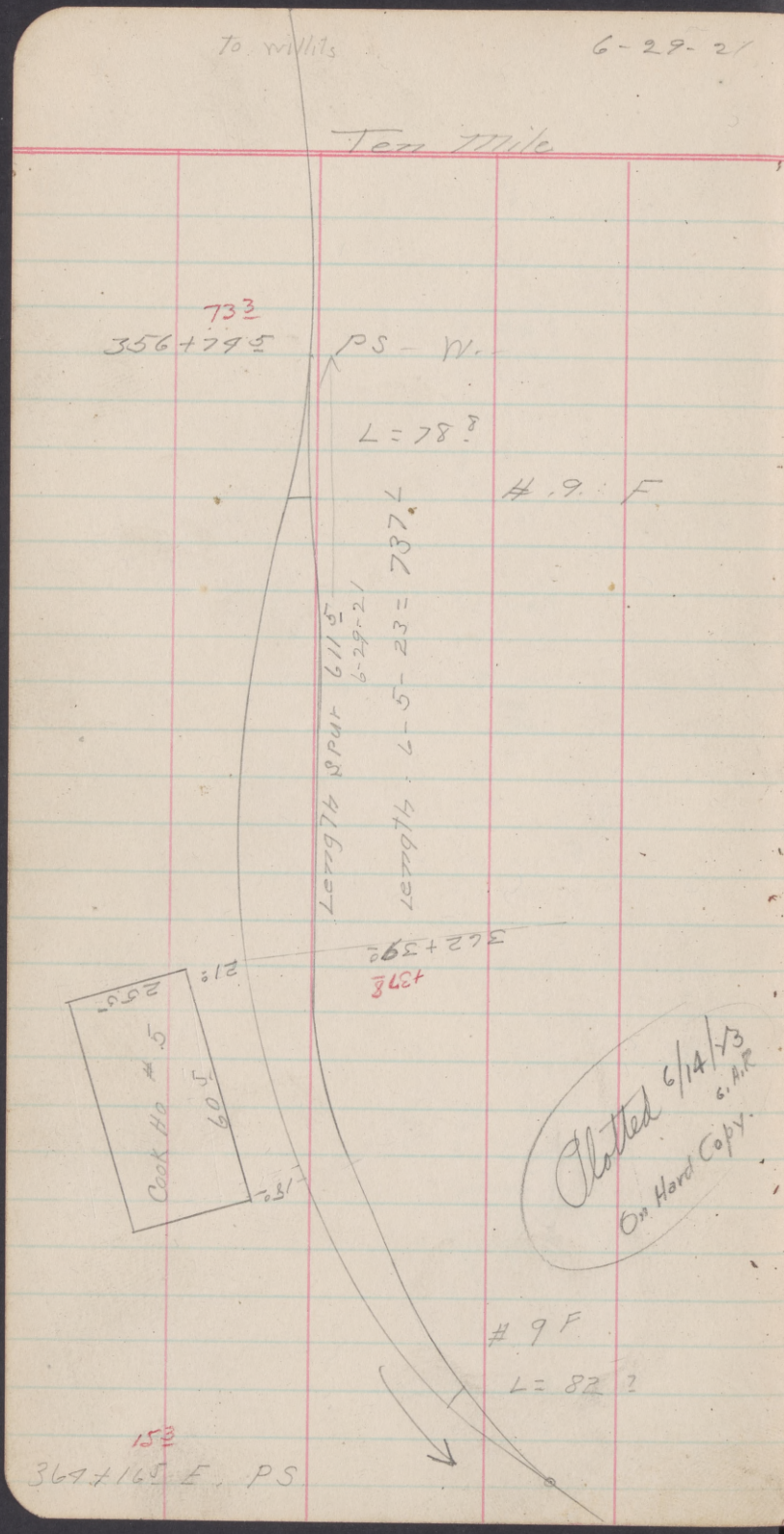
Ten Mile

End of Steel 6-29-21

388+87.5 end Track

385+53.7 PS (Changed)

6-29-21 37



To Willits
6-29-21
Ten Mile
73 3
356+74 5
PS - W.
L = 78 8
# 9 F
Length Spur 611 5
6-29-21
Length 6-5-23 = 737 L
362+39 0
+37 8
21 0
25 5
Cook Ho # 5
60 5
13 0
Plotted 6/14/13
G.A.R
On Hard Copy.
# 9 F
L = 82 ?
15 3
364+16 5 E. PS

Ten Mile

Levels Con from Page

				1061.55
	4 14	1065.69		
379			0.8	1064 9
+50			2.6	1063.1
380			4.7	1061.0
+50			7 1	1058.6
381			8.9	1056 8
+50			10.5	1055.2
382			11.7	1054.0
+50			13.1	1052.6
			12 84	1052.85
	2.28	1055 13		
+89			3 6	1051.5
383			3.8	1051.3
+50			4 5	1050.6
+75			4 9	1050.2
384			4 9	1050 2
+50			4 1	1051.0
385			2.9	1052.2
+50			1.5	1053 6
+74			0.9	1054.2
			2 40	1052.93
	12 80	1065.73		
386			10 5	1065.2
+50			8 9	1056.8
387			7 1	1058.6
388			2.8	1062.9
+95				1066.5

32

BM Nail in Cap Station 379+12 ℄

Top of Rail Levels 68# rail

W BIK Trestle # 59

E BIK

PS

TP on Cmg pt Hub

Switch back #3

		1055.13		
385+71.3				1054.2
386			1 7	1053.4
+50			3 3	1051.8
387			4 5	1050.6
+03				
+50			5 6	1049.5
388			6 8	1048.3
+50			9 0	1046.1
389			11 8	1043.3
			12.62	1042.51
	0.11	1042.62		
+50			2 3	1040.3
390			5 3	1037.1
+50			8 3	1034.3
391			10 5	1032.1
+50			12 5	1030.1
			12.89	1029.73
	1.11	1030.84		
392			2 3	1028.5
+11			2 7	1028.1
+50			4 1	1026.7
393			5 8	1025.0
+50			7 4	1023.4
+60			7 8	1023.0
394			9 0	1021.8

PS

W BLK Trestle # 60

E BLK

W BLK Trestle # 61

		1030 84		
+50			10 3	1020,5
395			11 5	1019.3
+10			11 8	1019.0
+50			13:1	1017.7
			12 98	1017.86
	0.58	1018 44		
396			2 3	1016.1
+50			4 0	1014.4
397			5 3	1013.1
+10			6 2	1012.2
+50			7 3	1011.1
+83			8 2	1010.2
398			8 5	1009.9
			8 32	1010.12
	0,75	1010 87		
+50			2 3	1008.6
399			3 3	1007.6
+50			4 7	1006.2
400			6 2	1004.7
+50			7 6	1003.3
401			8 9	1002.0
+50			10 5	1000 4
402			12 3	998.6
			12 63	998.24
	.0 32	998 56		

E BIK

W. BIK Trestle # 62

E "

		998.56		
+50			1.0	997.6
403			2.7	995.9
+05				
			5.40	993.16
+50			4.4	994.2
404			6.1	992.5
+50			7.7	990.9
405			9.4	989.2
+50			11.2	987.4
+56				
406			12.3	986.3
			12.77	985.79
	2.62	988.41		
+50			3.1	985.3
407			4.6	983.8
+50			6.1	982.3
408			8.0	980.4
+50			9.4	979.0
409			11.1	977.3
+50			12.6	975.8
			12.95	975.45
	0.17	975.63		
410			1.4	974.2
+50			3.0	972.6
411			4.2	971.4

W BLK	TRESTLE # 63		
B.M.	RR SPIKE Top Stump 10' ft Lt		403+37
E BLK			

		975 63		
+32 5			4 9	970 7
+50			5 3	970 3
412			6 7	968 9
+50			8 2	967 4
+75			8 8	966 8
413			9 6	966 0
+50			11 2	964 4
414			12 7	962 9
			12 99	962 64
	0 09	962 73		
+50			1 3	961 4
+75			2 3	960 4
415			3 0	959 7
+50			4 6	958 1
416			6 3	956 4
+50			8 1	954 6
+75			9 1	953 6
417			10 1	952 6
+50			11 7	951 0
			12 97	949 76
	2 55	952 31		
418			3 2	949 1
+50			4 4	947 9
419			6 0	946 3
+50			7 7	944 6

W Blk	Trestle #	64	
E Blk			
W Blk	Trestle #	65	
E Blk.			

		952 31		
420			8.9	943 4
+50			9.8	942.5
			10.70	941 61
	1 02	942.63		
421			1.1	941.5
+30			1.7	940.9
+50			2 1	940.5
422			3 0	939.6
+50			4.0	938.6
423			5 1	937.5
+50			6 7	935.9
424			7 6	935.0
+50			7 8	934.8
425			6 8	935.8
+50			5 1	937.5
+71 8			4.4	938.2
426			3 2	939 4
+50			0.4	942.2
427				9442
+50				946 7
+67				947 5

W BLK Trestle # 66

E BLK

PS. of Switch back # 4

end of Switch back # 4

		942.63		
425+71.8				
426			5 5	937.1
+50			7 2	935.4
+90.				
427			8.6	934.0
+50			10 2	932.4
428			11.8	930.8
			12 59	930 04
	0.06	930.10		
+50			1 1.	929.0
429			2.8	927.3
+50			4 5	925.6
430			6 1	924.0
+50			7 8	922.3
431			9 8	920.3
			8 79	921.31
+50			11.7	918.4
432			13 2	916.9
			12.89	917.21
	1.24	918.45		
+50			3 3	915.2
433			5 1	913.4
+50			6 6	911.9
+65			7 2	911.3
434			8 3	910.2

PS

W BIK Trestle # 67

BM RR Spike Top Stump 16° Lt Sta 430+75

E BIK

		918 45		
+50			10.2	908.2
			10.50	907.95
	021	908.16		
+54			0.0	908.2
435			1.4	906.8
+50			3.2	905.0
436			5.2	903.0
+50			7.0	901.2
+57				
437			8.9	899.3
+50			10.9	897.3
438			12.8	895.4
			12.96	895.20
	015	895.35		
+50			2.0	893.4
439			3.9	891.5
+50			5.8	889.6
440			8.1	887.3
+50			10.0	885.4
			4.91	890.44

W BIK	Tres/Le # 68		
E BIK			
BM RR spike on stump 16 Lt 439+40 12 ft W of PI			

Ten Mile

				1140.71
356+80	3 6	1194.31		
0+00				1143.7
+50				1141.4
1				1140.1
+50				1138.6
2				1137.0
+50				1134.7
3				1133.4
			12.31	1132.00
	0.39	1132.39		
+50				1130.4
4				1128.6
+50				1126.7
5				1124.7
+50				1122.1
			11.27	1121.12
	7.38	1128.50		
6				1119.6
+50				1118.1
7				
+37 =				1114.7
364+16				

6-3-23-47

Levels over siding

at Camp-5-

BM

P.S.

Ten Mile

Note

Spur at Camp -3- has all been taken up

Camp -4-

Switch has been Taken up, but will be replaced again

Camp -5-

Spur has been extended making a double end siding

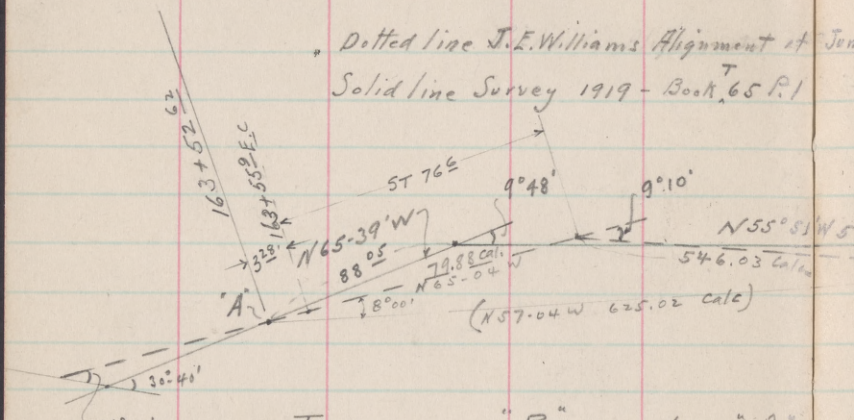
Total Length = 737 ft

see page 38-

Road bed is graded about 400 ft beyond end of steel 6-5-23 about 1000 Tie feet of rail on hand

Location of E. Station

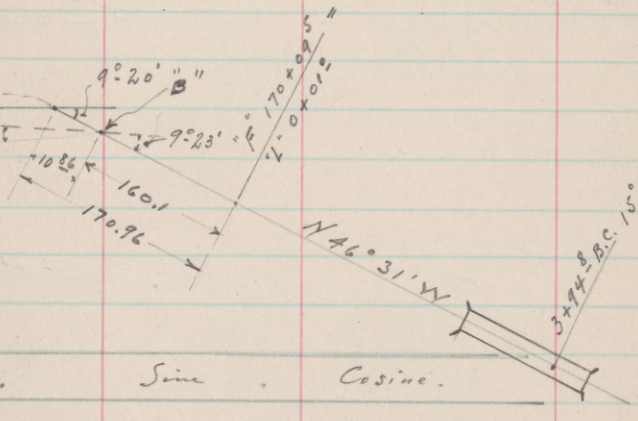
F. 163+52 62



Traverse "B" to "A"

Course	Dist.	N.	S.	E.
S46°-31'E	10.86		7.432	7.836
S55°-51'E	527.48		296.107	436.527
S65°39'E	88.05		36.304	80.217
N57-04W	625.02	339.843		
			339.843	524.580

June 1922.

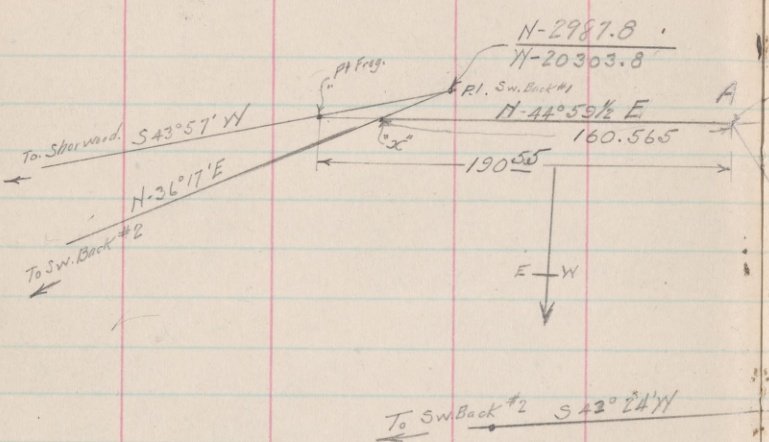


W.	Sine	Cosine
	.725575	.688144
	.827571	.561361
	.911044	.412310

524.580

Tie- Switch Back #1 to [illegible]

And Traverse Thru Sw. Bk



Course	Distance	North	South	East
P.I. #1 to #2		1031.976	2999.295	5429.632
#2 to 'B'		3796.033	711.629	58.814
N-67°38' W	241.020	91.716		
S-47°35½ E	1380.120		1315.578	417.115
N-44°59½ E	160.565	113.553		113.520
S-36°17' W	4.906		3.955	
		5033.278	5030.457	6019.081
			2.821	
			1318.399	414.238

4196.6
1318.4
N-2878.2

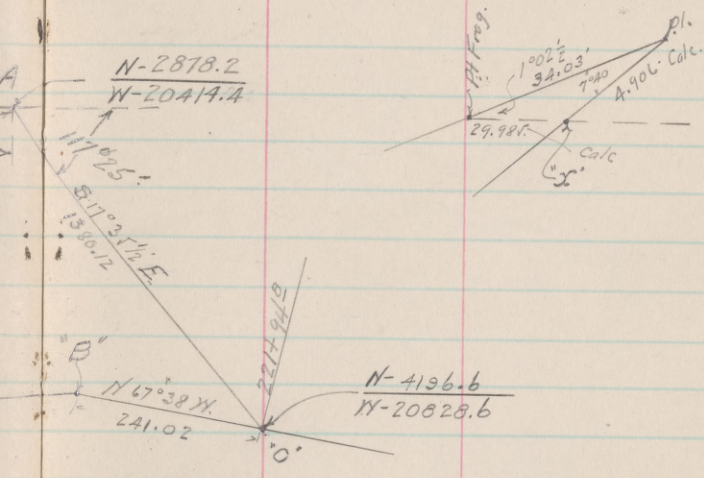
20828.6
414.2
W20414.4
110.6
N20303.8

113.553
3.955
109.598
2878.2
N2987.8

113.520
2.90
110.62

E. S. 221+94.8

BK #2

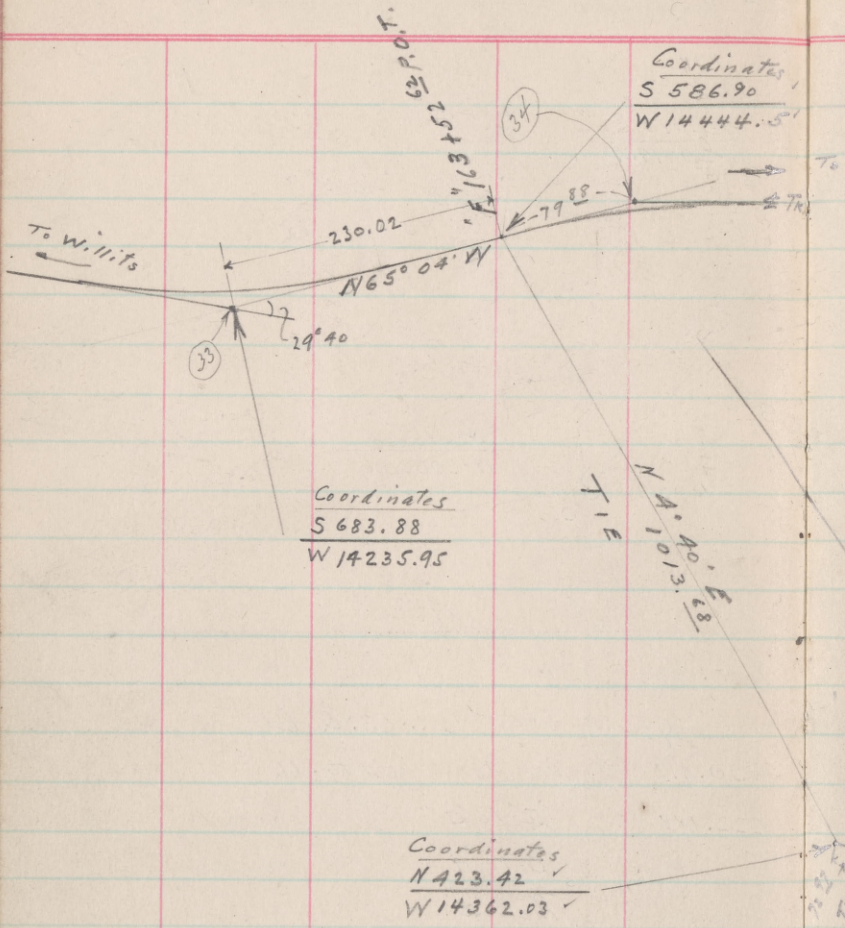


West.

	See Page. 63. & 64
5790.413	See Page 64 to - 66
222.888	"B" to "C"
	"C" to "A"
	"A" to "X"
	"X" to P.I.
2.903	
6016.204	
2.877	

Calculated Closed Thru Tie

Tie from E.S. "F" 163+52 62

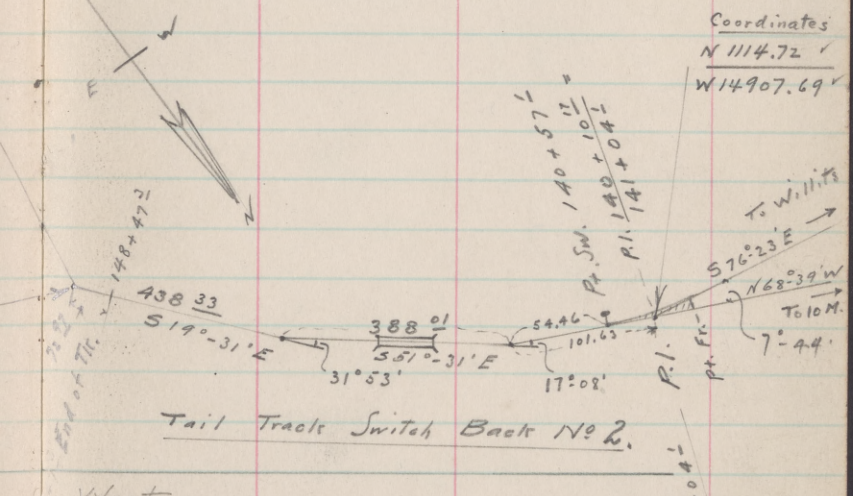


Traverse E.S. "F" 165+05 42 to Sw. Blk. #2 to Sw. Blk #1.

Course	Distance	North	South	East
N 4°40' E	1013.68	1010.320		82.472
N 19°38' W	438.33	412.850		
N 51°31' W	388.01	241.454		
N 68°39' W	101.63	37.000		
P.I. #2 to P.I. #1.		2999.295	1031.976	
P.I. #1 to "F" 163+52 62		560.533	4341.768	5823.655
		5261.452		5906.127
		112.292		69.171
		5373.744	5373.744	5975.298

P.O.T to Switch Back No 2

To Sw. Bk. #1.



West

147.280

303.730

94.656

5429.632

From Courses & distances in Book 54 page 7 to 10.

5975.298

Course	Dist	North	South	East	Y
N 68°-01'W	249.8	93.509			
N 87°-48'W	1156.1	44.380			
N 52°-10'W	1210.0	742.174			
N 71°-12'W	649.8	209.408			
N 39°-58'W	541.9	415.322			
N 70°-44'W	362.3	119.546			
S 42°-48'W	575.6		422.335		
N 87°-21'W	583.7	26.987			
N 37°-03'W	454.0	362.342			
N 78°-19'W	664.4	134.542			
N 83°-46'W	1089.9	118.181			
N 51°-43'W	343.1	212.568			
N 73°-03'W	218.8	63.788			

V/est	Sine	Cosine	
231.638	.927293	.374337	1
1155.248	.999263	.038388	2
955.656	.789798	.613367	3
615.133	.946649	.322266	4
348.085	.642342	.766418	5
342.009	.943993	.329965	6
391.086	.679441	.733730	7
583.076	.998931	.046235	8
273.540	.602512	.798110	9
650.635	.979282	.202502	10
1083.474	.994104	.108433	11
269.319	.784957	.619551	12
209.295	.956560	.291537	13

Course	Dist.	North	South	East
S 82°-37' W	532.8		68.469	
S 57°-57' W	770.8		409.032	
S 59°-47' W	257.0		129.341	
S 57°-37' W	362.2		193.987	
S 65°-47' W	231.2		94.835	
S 63°-23' W	291.9		130.777	
S 42°-57' W	409.2		299.514	
S 58°-27' W	403.3		211.023	
S 67°-19' W	667.3		257.336	
S 59°-47' W	197.1		99.195	
S 78°-29' W	295.0		58.898	
S 84°-15' W	236.0		23.644	
N 74°-22' W	363.4	97.929		

Y/Yest	Sine	Cosine	
528.383	.991709	.128507	14
653.319	.847585	.530659	15
222.081	.864128	.503271	16
305.872	.844484	.535581	17
210.855	.912001	.410188	18
260.966	.894024	.448019	19
278.813	.681360	.731.949	20
343.686	.852184	.523242	21
615.684	.922650	.385638	22
170.320	.864128	.503271	23
289.061	.979867	.199653	24
234.813	.994969	.100188	25
349.956	.963006	.269480	26

Course	Dist.	North	South	East	Y
S 11°-26' W	344.5		337.664		
S 58°-26' W	238.9		125.062		
S 72°-26' W	433.5		130.837		
S 43°-36' W	276.8		200.451		
S 64°-24' W	1066.7		460.906		
N 78°-04' W	712.4	147.305			
N 35°-24' W	222.6	181.447			
N 65°-04' W	309.9	130.642			
N 55°-54' W	546.03	234.291			
N 46°-31' W	602.50	110.172			
N 32°-01' W					

Yvest	Sine	Cosine	
68.290	.198228	.980156	27
203.550	.852032	.523490	28
413.284	.953366	.301815	29
190.887	.689620	.724172	30
961.985	.901833	.432086	31
697.004	.978389	.206773	32
128.948	.779281	.815128	33
281.017	.906799	.421563	34
346.046	.828060	.560639	35
116.165	.725575	.688144	"L"0+01 36
			37
			38
			39

Course	Dist.	North	South	East	

West	Sine	Cosine	
			40
			41
			42
			43
			44
			45
			46
			47
			48
			49
			50
			51
			52

Course	Dist.	North	South	East
S43°-57'W	378.26		272.327	
P.I. Sw. Bac K. #1				
N36°-17'E	126.8	102.214		75.038
N38°-57'E	273.6	212.777		171.996
N52°-01'E	422.7	260.143		333.168
S83°-59'E	427.4		44.799	425.045
S81°-05'E	435.9		67.564	430.632
S67°-25'E	282.1		108.334	260.469
S28°-01'E	351.4		310.220	165.062
N85°-21'E	448.7	36.376		447.223
S46°-59'E	368.6		251.463	269.504
S28°-29'E	219.3		192.755	104.585
S52°-47'E	212.5		128.527	169.225
S5°-47'E	219.1		217.985	22.078
		611.510		2874.025

	Y/West	Sine	Cosine		
	262.523	.694030	.719946	P.I. #1	53
038		.591779	.806101		54
96		.628642	.777695		55
68		.788190	.615432		56
45		.994491	.104818		57
2		.987915	.154998		58
69		.923322	.384027		59
2		.469728	.882811		60
23		.996709	.081069		61
04		.731155	.682211		62
95		.476903	.878956		63
5		.796354	.604831		64
8		.100767	.994910		65
5					

Course	Dist.	North	South	East
S 38°-29'E	468.7		366.893	291.666
S 43°-47'E	473.7		341.993	327.769
N 58°-57'E	517.0	266.661		442.923
S 32°-59'E	569.0		477.294	309.761
N 70°-33'E	461.9	153.805		435.540
S 35°-31'E	309.1		251.591	179.569
S 58°-37'E	325.5		169.508	277.880
S 76°-23'E	298.9		70.369	290.499
P.I. Swback #2		1031.970	2999.295	5429.632
N 68°-39'W	248.5	90.470		
N 44°-51'W	611.1	433.243		
N 78°-23'W	330.9	66.631		
N 22°-55'W	388.6	357.929		
N 70°-15'W	416.8	140.844		

	N/S/E/W	Sine	Cosine		
.6		.622287	.782789		66
.9		.691933	.721962		67
.3		.856718	.515786		68
.1		.544395	.838829		69
40		.942932	.332984		70
69		.580940	.813947		71
0		.853702	.520761		72
9	000.000	.971893	.235425	P.I. ½	73
	231.446	.931374	.364064		74
	430.980	.705253	.708956		75
	324.122	.979517	.201363		76
	151.318	.389392	.921072		77
	392.282	.941176	.337917		78
	1530.148				

Course	Dist.	North	South	East	Y
N 89° 45' W	185.2	0.808			
N 59° 23' W	127.4	64.884			
N 34° 30' W	129.7	106.889			
N 0° 57' W	304.8	304.758			
N 73° 45' W	321.0	89.825			
N 46° 45' W	119.6	81.948			
N 21° 45' W	121.0	112.386			
N 10° 59' E	308.7	303.046		58.814	
N 33° 57' W	283.9	235.502			
N 50° 55' W	387.8	244.489			
N 30° 11' W	248.6	214.895			
N 60° 17' W	175.7	87.096			
N 70° 17' W	127.8	43.116			
		1889.642		58.814	

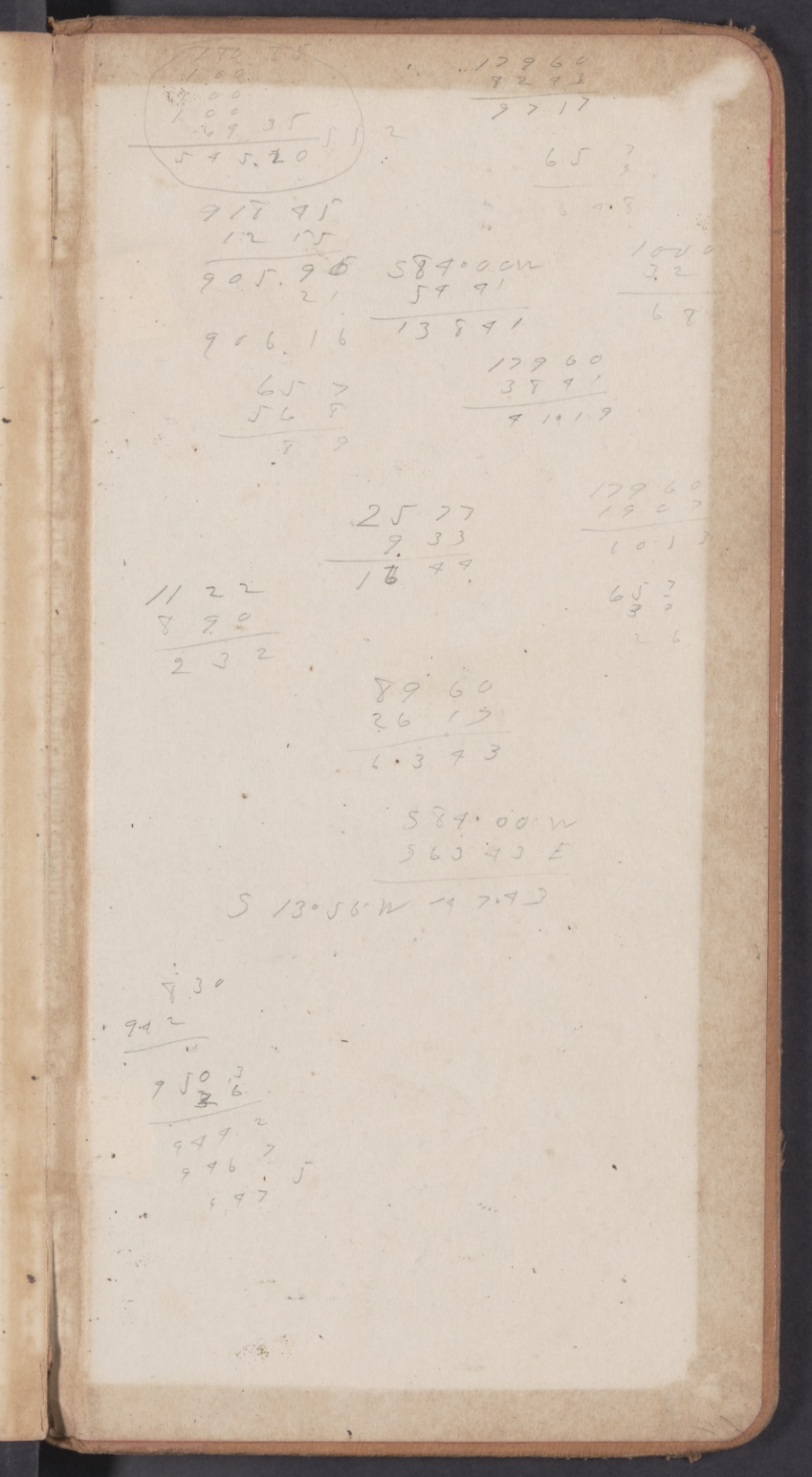
Y/West	Sine	Cosine	
185.198	.9999905	.004363	79
109.640	.860594	.509292	80
73.463	.566406	.824126	81
5.054	.016580	.999863	82
308.176	.960050	.279829	83
87.113	.728371	.685183	84
44.837	.370557	.928810	85
	.190523	.981683	86
158.549	.558469	.829525	87
301.022	.776230	.630450	88
124.988	.502769	.864421	89
152.593	.868487	.495711	90
120.307	.941372	.337369	91
1670.940			

Course	Dist.	North	South	East	
N 80° 17' W	151.4	25.553			
S 79° 33' W	164.0		28.106		
N 79° 51' W	157.2	27.703			
N 84° 57' W	204.2	17.975			
N 75° 11' W	279.1	71.373			
N 6° 23' W	372.9	370.588			
N 49° 09' W	464.9	304.082			
S 57° 21' W	572.2		308.705		
S 86° 49' W	457.6		25.411		
S 42° 24' W	473.16		349.407		
		3196.033	711.629	58.814	
N 67° 38' W	389.58	148.248			
N 87° 38' W	243.76	10.066			
N 32° 52' W	270.3	227.035			
			711.629		

Yest	Sine	Cosine		
149.228	.985654	.168776		92
161.280	.983414	.181377		93
154.740	.984350	.176226		94
203.407	.996118	.088025		95
269.820	.966749	.255727		96
41.459	.111180	.993800		97
351.662	.756425	.654081		98
481.782	.841982	.539506		99
456.894	.998457	.055531		100
319.053	.674302	.738455	(P.1. "B" See Pp. 57)	1
5790.413				
360.271	.924768	.380532		2
243.552	.999147	.041294		3
146.688	.542686	.839936		4

Course	Dist.	North	South	East
N69°50'W	154.8	53.368		
S58°53'W	453.7		234.464	
N67°40'W	375.15	142.555		
S55°43'W	392.95		221.343	
S18°02'W	278.7		265.009	
S46°32'W	308.6		223.974	
S13°26'E	382.9		372.424	88.953
S39°19'W	253.1		195.812	
S5°34'E	683.3		680.078	66.283
N88°04'W	693.3	23.390		
S5°37'W	377.7		375.887	
S36°10'W	296.8		239.608	
S3°05'E	977.2		975.785	52.562

West	Sine	Cosine	
145.310	.938694	.344752	105
388.420	.856117	.516782	6
347.010	.924989	.379994	7
324.680	.826262	.563286	8
86.277	.309570	.950877	9
223.974	.725775	.687933	110
	.232314	.972641	11
160.366	.633606	.773656	12
	.097004	.995284	13
692.906	.999431	.033737	14
36.966	.097872	.995199	15
175.152	.590136	.807304	16
	.053788	.998552	17

Course	Dist.	North	South	East
N46°50'W	809.0	553.456		
N21°46'W	226.1	209.980		
N61°30'W	1234.6	589.101		
S17°45'W	671.8		639.820	
N64°23'W	401.8	173.717		
S84°23'W	443.1		43.367	
N4°33E	953.0	949.997		75.601
S53°39'W	1039.9		616.365	
N15°21E	1016.7	980.431		269.136
S67°16'W	924.45		357.242	
N16°41'E	819.80	785.291		235.350
N11°19'W	178.61	175.127	[End of Track 4/25/19]	

West	Sine	Cosine	
590.058	.729367	.684123	118
83.844	.370828	.928702	9
1084.987	.878817	.477159	120
204.808	.304864	.952396	1
362.306	.901707	.432348	2
440.973	.995199	.097872	3
	.079329	.996849	4
837.547	.805411	.592716	5
	.264715	.964327	6
852.623	.378918	.925430	7
	.287082	.957906	8
35,049	.196231	.980558	9
			130